GR DIGITAL

① USB Cable
② AV Cable
③ Hand Strap
④ Rechargeable Lithium-Ion Battery: DB-60
⑤ Battery Charger: BJ-6
⑥ GR DIGITAL Software CD-ROM
⑦ Adobe® Photoshop® Elements CD-ROM
● Instruction Manuals(Camera, Introduction)*
Warranty Card

**Software manual supplied on CD-ROM*

■GR DIGITAL Main Specifications

Item	Description
Imaging device	1/1.8 primary color CCD with 8,130,000 effective pixels (total pixels: 8,300,000)
Lens	< Focal distance > f=5.9 mm (28 mm converted to 35mm format camera) < Brightness (F) > F 2.4 to F 11*1 < Lens composition > 6 elements; 5 groups: 7 diaphragm blades
Digital zoom	4.0x
Shooting range	About 0.3 m to infinity from lens tip
Macro shooting range	About 0.015 m to infinity from lens tip
Shutter	<Still> 180, 120, 60, 30, 15, 8, 4, 2, 1 - 1/2,000 sec. <Video> 1/30 -1/2,000 sec.
Pixels	<Still> 3,264 x 2,448; 3,264 x 2,176; 2,592 x 1,944; 2,048 x 1,536; 1,280 x 960; 640 x 480 <Text> 3,264 x 2,448; 2,048 x 1,536 <Video> 320 x 240; 160 x 120
Picture quality modes*2	F (Fine)/N (Normal)/RAW*3
ISO sensitivity*4	AUTO; 64; 100; 200; 400; 800; 1,600
Flash	Auto/redeye suppression/force flash/slow synchro/flash off Throw distance*5: approx. 0.2 to 3 m
Focus	Autofocus/manual focus/snap/infinity (AF supplemental light also available)
Exposure adjustment	TTL-CCD photometric system: multi (256 div.)/center focus photometry/spot photometry
Exposure compensation	Manual correction (+2.0 to -2.0 EV 1/3 EV steps); auto bracket feature (-0.5 EV; ±0; +0.5 EV)
White balance	Auto; fixed (Daylight/Overcast/Tungsten Light/fluorescent light/manual/advanced); white balance bracket feature
Recording media	SD memory card (3.3V 32/64/128/256/512MB/1GB); multimedia card; built-in memory (26 MB)
Storage capacity*6 (built-in 26 MB storage)	<Still> 3,264 x 2,448: RAW: 1/F: 8/ N: 14; 3,264 x 2,176: RAW: 1/F: 9; 2,592 x 1,944: N: 22; 2,048 x 1,536: N: 38; 1,280 x 960: N: 63; 640 x 480: N: 277
Storage time (built-in 26 MB storage)	<Video> 320 x 240: 39 sec (30 frames/sec); 160 x 120: 2 min 26 sec (30 frames/sec)*7 <Audio> 56 min 45 sec*8
Storage data capacity	<Still> 3,264 x 2,448: RAW: about 11.52 MB/screen; F: about 2.83 MB/screen: N: 1.63 MB/screen 3,264 x 2,176: RAW: about 10.25 MB/screen; F: about 2.57 MB/screen; 2,592 x 1,944: N: about 1.03 MB/screen; 2,048 x 1,536: N: about 672 KB/screen; 1,280 x 960; N: about 356 KB/screen; 640 x 480: N: about 83KB/screen
Recording modes	Photo (Still, Continuous, S-Continuous, M-Continuous), Program shift/Aperture-Priority/Manual exposure, Scene (Text, Sound), Motion
Recording formats	<Still> compression: JPEG*9 (Exif ver. 2.21); RAW(DNG)*10 <Text> TIFF (MMR format/ITU-T.6) <Video> AVI (Open DML Motion JPEG format compliant) <Audio> WAV (Exif ver. 2.21 μlaw)
LCD monitor	2.5 inch low-noise polysilicon TFT LCD; about 210,000 pixels
Self timer	Operating time: about 10 sec/2 sec
Interval timer	Shooting interval: 5 sec. to 3 hours (units of 5 sec.)*11
PC interface	USB 2.0; Ricoh original mass storage selectable*12
AUDIO/VIDEO interface	Audio OUT/Video OUT
Video signal format	Switch between NTSC & PAL
Dimensions	107.0 x 25.0 x 58.0 mm (WxDxH); does not include protruding parts
Weight	About 170 g (not including battery/SD memory card/strap); supplied parts: 30g (battery/strap)
Power	1 Rechargeable battery (DB-60); AC adapter (AC-4c option); 2 AAA alkaline dry-cell batteries 2 AAA Oxyride dry-cell batteries; 2 AAA nickel-hydrogen dry-cell batteries
Shooting capacity*13	CIPA standard compliant | DB-60 used: about 250; When AAA alkaline dry-cell battery used: about 30*14
Temp. range for use	0°C to 40°C

**1: If mode dial is set to , ND filter is used in F7.1-F11 range.*
**2: Image-quality modes that can be set depend on the image size.*
**3: Simultaneous storage with Fine mode (JPEG).*
**4: ISO 1600 cannot be chosen when shooting in the RAW mode.*
**5: Throw distance when ISO AUTO set.*
**6: General estimate of number of still images stored.*
**7: A 1GB SD card can record for a maximum of 88 minutes 31 seconds.*
**8: A 1GB SD card can record for a maximum of 2,063 minutes 25 seconds.*
**9: DCF compliant; DPOF supported. DCF is an abbreviation for Design rule for Camera File system standardized by JEITA. (full compatibility between devices not guaranteed).*
**10: DNG is a particular RAW format advocated by Adobe systems incorporated.*
**11: With Flash off.*
**12: Mass storage supports Windows Me/2000/XP and Mac OS 9/X 10.2-10.4. Windows 98/98SE and Mac OS 8.6 not supported.*
**13: The numbers of photos that can be taken were measured using conditions compliant with the CIPA standard. They are only given as a rough guide.*
**14: The actual number of photos that can be taken will differ greatly depending on conditions of use and battery manufacturer.*

■GR DIGITAL Optional Accessories

Accessory Name	
External Viewfinder	GV-1
Wide conversion lens	GW-1
Hood & Adapter	GH-1
AC Adapter	AC-4c
Soft case	GC-1
Neck strap	GS-1
Cable switch	CA-1
Rechargeable Lithium-Ion Battery	DB-60
Battery Charger	BJ-6

• Vignetting in viewfinder may increase with use of external viewfinder, wide conversion lens or hood.
• Internal flash cannot be used with wide conversion lens or hood.

■GR DIGITAL Softwares

	Windows XP	Windows 98/98SE/2000/Me	Mac OS 10.1.2-10.4	Mac OS 8.6-9.2.2
1. RICOH Gate La	○	○	×	○
2. Image Mixer 1.6	○	○	×	×
3. USB driver*15	○	○	○	○
4. WIA Driver	○	×	×	×
5. Mounter	×	×	○	○
6. Acrobat Reader	○	○	×	×
7. Direct X	○	○	×	×
8. Adobe® Photoshop® Elements (Tryout Version)	○ Home/Professional(SP1) or later	○ 2000(SP4) only	○ 10.2.8, 10.3 only	×

**15: Ricoh original.*

■GR DIGITAL Softwares Operating Environment

	Windows	Macintosh
Operating software	Windows 98/98 Second Edition Windows 2000 Professional Windows Me Windows XP Home Edition/XP Professional	Mac OS 8.6-9.2.2 Mac OS X 10.1.2-10.4
Memory	Windows 98/ 98SE: 128MB or more Windows 2000 Professional : 128MB or more Windows Me: 128MB or more Windows XP Home Edition/XP Professional: 256MB or more	Mac OS 8.6-9.2.2 : 96MB or more (128MB or more recommended) Mac OS X 10.1.2-10.4 : 128MB or more (256MB or more recommended)
Hard drive space	Windows 98/98SE: 500MB or more (during installation) Windows 2000 Professional : 500MB or more (during installation) Windows Me: 500MB or more (during installation) Windows XP Home Edition / XP Professional : 500MB or more (during installation)	Mac OS 8.6-9.2.2: 10MB or more (during installation) Mac OS X 10.1.2-10.4: 100 MB or more (during installation and operation)
Display	Resolution: 640 x 480 dots or more, 256 colors or more (800 x 600 dots or more, 65,000 colors or more recommended)	Resolution: 640 x 480 dots or more, 256 colors or more (800 x 600 dots or more, 32,000 colors or more recommended)
Other	USB port, keyboard, CD-ROM drive, mouse required	USB port, keyboard, CD-ROM drive, mouse required

• Only USB connection is available when connecting GR DIGITAL to a PC.Serial connection is unavailable.
• Valid for systems with preinstalled OS and USB port.
• Supplied soft ware can be used for Caplio RX, GX, GX8, R1, R1S, RZ1, R1V, R2, R2S, R3, G4 series, G3 series, ProG3, 300G, 400Gwide, and RR30. Caplio G3 model S and ProG3 are not compatible with Macintosh.

■SD Memory Card Storage Capacity (Number of images/time)

Mode	Quality	Pixels	Built-in	64MB	128MB	256MB	512MB	1GB
Still	RAW	3264 x 2448	1 images	4 images	8 images	16 images	33 images	64 images
	RAW	3264 x 2176	1 images	4 images	9 images	18 images	37 images	72 images
	F	3264 x 2448	8 images	19 images	39 images	78 images	158 images	305 images
	F	3264 x 2176	9 images	21 images	44 images	88 images	177 images	341 images
	N	3264 x 2448	14 images	33 images	68 images	136 images	275 images	530 images
	N	2592 x 1944	22 images	53 images	107 images	213 images	430 images	828 images
	N	2048 x 1536	36 images	84 images	170 images	339 images	683 images	1314 images
	N	1280 x 960	63 images	148 images	301 images	600 images	1209 images	2324 images
	N	640 x 480	277 images	645 images	1304 images	2599 images	5237 images	10072 images
Text		3264 x 2448	51 images	121 images	244 images	487 images	982 images	1889 images
		2048 x 1536	87 images	203 images	412 images	821 images	1654 images	3181 images
Motion		320 x 240	39"	1'31"	3'4"	6'7"	12'19"	23'42"
		160 x 120	2'26"	5'40"	11'27"	22'50"	46'1"	88'31"
Sound		———	56'45"	132'11"	267'15"	532'36"	1073'00"	2063'25"

• Average number of images and time.

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For more information, visit:
http://www.ricoh.co.jp/r_dc

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RICOH

GR
DIGITAL

GR LENS
F2.4/f=5.9mm(equiv.28mm)
×
GR ENGINE

1/710sec, F4.5, ISO64, EV-1.3, (Full-size photo; no trimming)

Focal lengths are 35mm film camera equivalents.

The GR Digital - a new star in Ricoh's legendary GR family

Ricoh's celebrated GR film cameras are revered by photographers for their uncompromising image quality. Now the same passion and idealism that spurred development of the GR series has merged with cutting-edge digital technology to create a new masterpiece — the GR Digital. Featuring Ricoh's renowned GR Lens, this new digital camera captures scenes with amazing clarity to the very corners of the image. And Ricoh's GR Engine minimizes noise while providing natural tone and color reproduction. The GR Digital. A new legend for those who recognize true quality.

GR
DIGITAL

The 28mm wide-angle lens delivers sensational realism and clearly communicates the photographer's intentions.

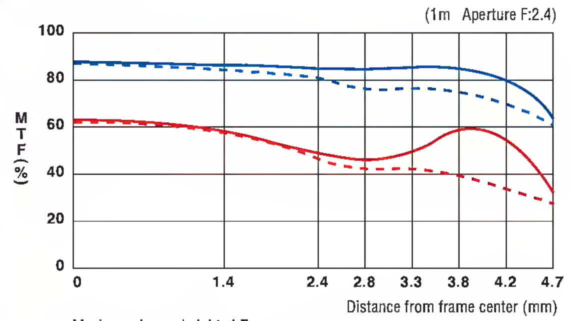
1/870sec, F4.0, ISO64, (Full size photo; no trimming)

Ricoh's unrivaled GR Lens enters the digital age

Exceptional resolution and low distortion in a single lens unit

Superb image resolution that clearly captures individual hairs. Crisp image quality even in the periphery. These are the proud hallmarks of Ricoh's highly renowned GR Lens, which is breathing new life into digital photography. As illustrated by the MTF curves below, the GR Lens (F2.4, f=5.9mm, equivalent to 28mm focal length on 35mm film camera) compensates for various aberrations, as well as weaker light in the periphery to deliver high-resolution, high-contrast reproduction over the entire image. This exceptional optical performance is ideal for pan-focus, wide-angle photos and empowers users in all shooting environments by providing sharp images with natural color even when the aperture is fully open. With its standout performance and unique personality, this new GR Lens is worthy of inheriting the GR name.

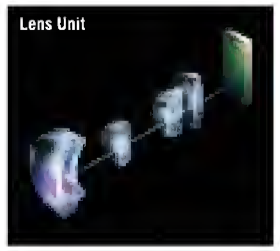
MTF Line Values



Maximum image height: 4.7mm
Blue lines: 50/mm Solid lines: Radial values
Red lines: 150/mm Dotted lines: Tangential values

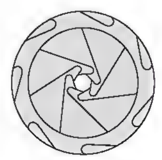
Retractable 5-group 6-lens unit showcases original Ricoh technology

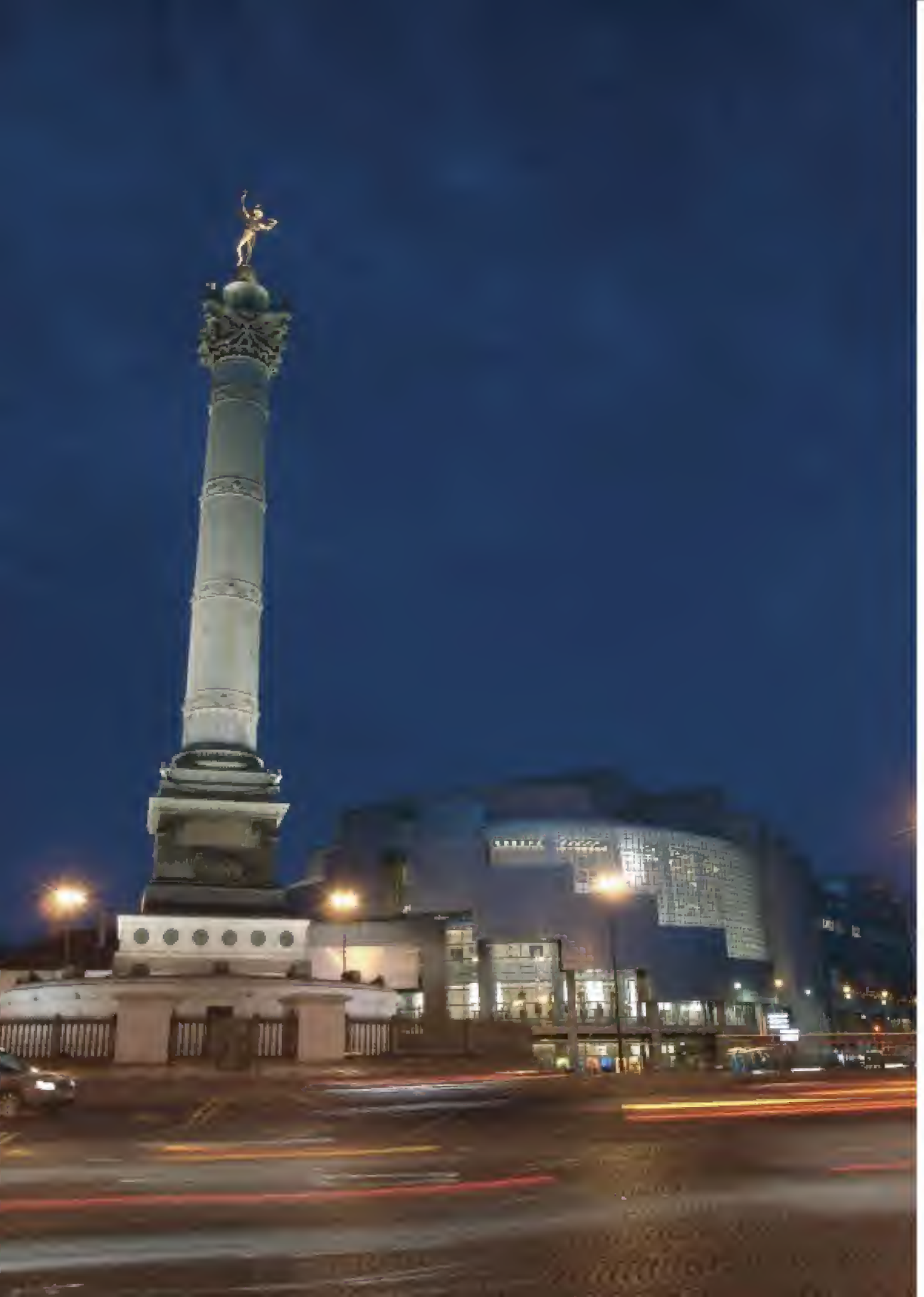
The GR Lens fully compensates for aberrations throughout the wide 28mm field of view by employing six high-quality optical glass lenses in five groups with a special low dispersion lens and two molded aspherical lenses. Multi-coated lens surfaces help direct all wavelengths toward the image sensor for maximum lens brightness, and a large maximum aperture of F2.4 enabled Ricoh to strike a fine balance between large lens diameter and compact dimensions. The original, space-saving design of this retracting lens system combines with a micro-precision drive to enable housing of the high-performance 28mm equivalent lens unit within a slender 25mm body.



Beautiful blurred backgrounds through seven aperture blades

Fine-tuning of the aperture between F2.4 and F9 settings is possible in 1/3EV step increments, allowing photographers to adjust depth of field and achieve beautiful blurred backgrounds whenever desired.
The quality of blurred backgrounds is especially high because seven aperture blades (an odd number) form a nearly circular lens iris not only when the aperture is fully open, but also when the aperture is nearly closed.





The GR Lens brings out
subtle gradations in a twilight sky.
1sec, F5.6, ISO64, EV-1.3

Natural reproduction of color, without bleeding. Even casual shots become superb visual art.

1/52sec, F4.0, ISO64, (Full-size photo; no trimming)

8-megapixel CCD and new GR Engine faithfully capture every scene

GR Lens advantages bring out high-resolution CCD potential

Ricoh's advanced CCD delivers signature GR image quality. This compact 1/1.8-type imaging sensor with approximately 8.13 million effective pixels fully complements the sharp GR Lens to produce images with rich gradations and a wide dynamic range. Results are truly gratifying even when shooting at high sensitivity settings up to ISO1600.

Color aberration correction eliminates purple fringes

One of the most common color aberrations faced by digital photographers is a chromatic aberration called a "purple fringe" that appears along high-contrast edges. This problem becomes more pronounced when using a wide-angle lens and fully open aperture. But highly efficient color aberration correction functions in the GR Digital eliminate purple fringes and reproduce true-to-life images in vivid, fine detail and natural color.

Newly developed GR Engine reproduces true-to-life images

The GR Engine was developed with the goal of reproducing images that match or surpass film camera photographs in terms of resolution and color faithfulness. Its sophisticated image processing algorithm, developed through analysis of massive sample image data, produces natural results in nearly all shooting conditions. Even diagonal lines, which are a challenge for CCD sensors, are reproduced smoothly thanks to an original image correction process in Ricoh's GR Engine. By intelligently analyzing shooting conditions and user intentions, Ricoh's new GR Engine produces exceptionally pleasing true-to-life results.

Meticulously screened components sharply reduce noise

Grainy electronic noise, especially in shadows, is a problem inherent to digital cameras. Ricoh minimizes such noise at its source by only employing electronic components, such as circuit boards, that have been proven through rigorous screening to offer excellent low-noise characteristics. This low-noise internal circuitry together with advanced digital noise reduction helps ensure superb image quality that is worthy of the GR moniker.

A wealth of functions helps you realize your creative vision

The architectural grandeur of this scene is conveyed with fine details in the shadows and no blowout in the highlights.

1/5sec, F5.6, ISO64, (Full-size photo; no trimming)

Customizable settings enhance control over image reproduction

In the evolution from film to digital, the GR Digital gained the ability to customize image reproduction settings. Previously, photographers could change the type of film and adjust image quality in the development and printing stages to obtain desired results. But the GR Digital can achieve similar results through simple manual adjustment of such settings as contrast and levels before shooting. Each setting offers five levels of adjustment, and users can save up to two combinations of settings for later recall when similar shooting conditions arise.

Simultaneous recording of JPEG and RAW for high flexibility

With one press of the shutter button, the GR Digital simultaneously creates two image files: one in the JPEG data format and the other in RAW. This option gives users the flexibility to choose the best format later, depending on how the image is used. RAW images are saved as DNG (Digital Negative Archival) files, which can be processed with ease to achieve desired results in Adobe Photoshop and other digital imaging software.

White balance adjustment lets you captures subtle differences in color nuance

Accurate white balance is essential for the faithful reproduction of subtle colors. Such accuracy can be achieved through one of seven versatile white balance modes (Auto, Daylight, Overcast, Tungsten Light, Fluorescent Light, Manual, and Advanced). The Auto mode automatically provides highly accurate white balance regardless of the subject's color and reflectivity. Also provided is a white balance bracketing function that generates several instances of the same shot with automatically shifted white balance settings.

High-precision AE quickly adjusts to suit any shooting environment

The GR Digital offers two automatic exposure (AE) modes - program shift and aperture priority - as well as a manual exposure mode. In the program shift mode, the GR Digital quickly selects the ideal combination of exposure and shutter speed for the shooting environment according to default or user-configured parameters. Users can choose center-weighted metering, spot metering, or exceptionally accurate 256-point multi metering that is not affected by luminance gaps around the metering spots.

Approx. 1.5 sec. shooting cycle* for rapid shooting response

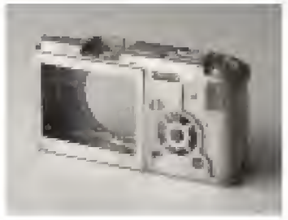
High-speed AF is assured when the shutter is fully pressed without stopping halfway. Throughout the entire shooting cycle, including the AF process, GR Digital works at maximum speed — in combination with fast data writing to memory card — to deliver fast 1.5 second response to sudden shutter opportunities. Until the memory card is full, this consistently quick shooting cycle is not affected by how much storage space remains in the card. Data compression is accelerated by an efficient coding algorithm, and the shooting interval is a quick 1.3 seconds.

** When using a SD Memory Card with a data transfer speed of at least 10MB/sec.*
• Measured value with flash set to OFF.

A supremely user-friendly, elegant design that makes owners proud

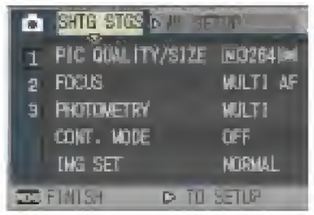
Sturdy yet elegant magnesium body

GR Digital is designed to accompany photographers wherever they go, reliably capturing any scene at a moment's notice. Durable, lightweight and easy to hold, its die-cast magnesium body protects high-precision inner circuitry from electromagnetic interference while exuding a highly satisfying look of genuine, luxurious quality.



Simple, one-action-operation menu system

Functional advances are no excuse for complex operation. With the goal of an ultimate one-action, one-button user-interface, Ricoh developed an elegant menu system that lets users instantly call up often-used functions in response to shutter opportunities.



Clear 2.5-type, 210,000-pixel LCD with 100% coverage

The large 2.5-type color TFT LCD monitor on the back of GR Digital provides 100% coverage*1 of the field of view. At roughly 210,000 pixels, the screen's high resolution makes it easy to check the focus by zooming in on pictures after shooting. The screen also assists users by displaying various information, including histograms for adjusting exposure and grids for achieving precise vertical/horizontal alignment or tripartite-division framing.

Optional GV-1 external viewfinder for more comfortable framing

LCDs on digital cameras are not always ideal for monitoring dark environments and fast-moving subjects. But the optional GV-1 optical viewfinder solves this problem. It mounts on the hot shoe almost directly above the lens and offers a framing guide for capturing a 21mm-equivalent field of view when using the optional GW1 21mm wide conversion lens.

*1: At 3264 x 2448 and 3264 x 2176 resolution settings when digital zooming is not in use.

Image is simulated

• Actual framing differs from simulated screen image shown below.

Built-in automatic pop-up flash with brightness sensor

The built-in flash unit pops up automatically when needed and is far enough from the lens to illuminate all corners of the wide 28mm-equivalent field of view without lens barrel vignetting. This sufficient distance between flash and lens also reduces the occurrence of red eye. The flash has a guide number of 12.

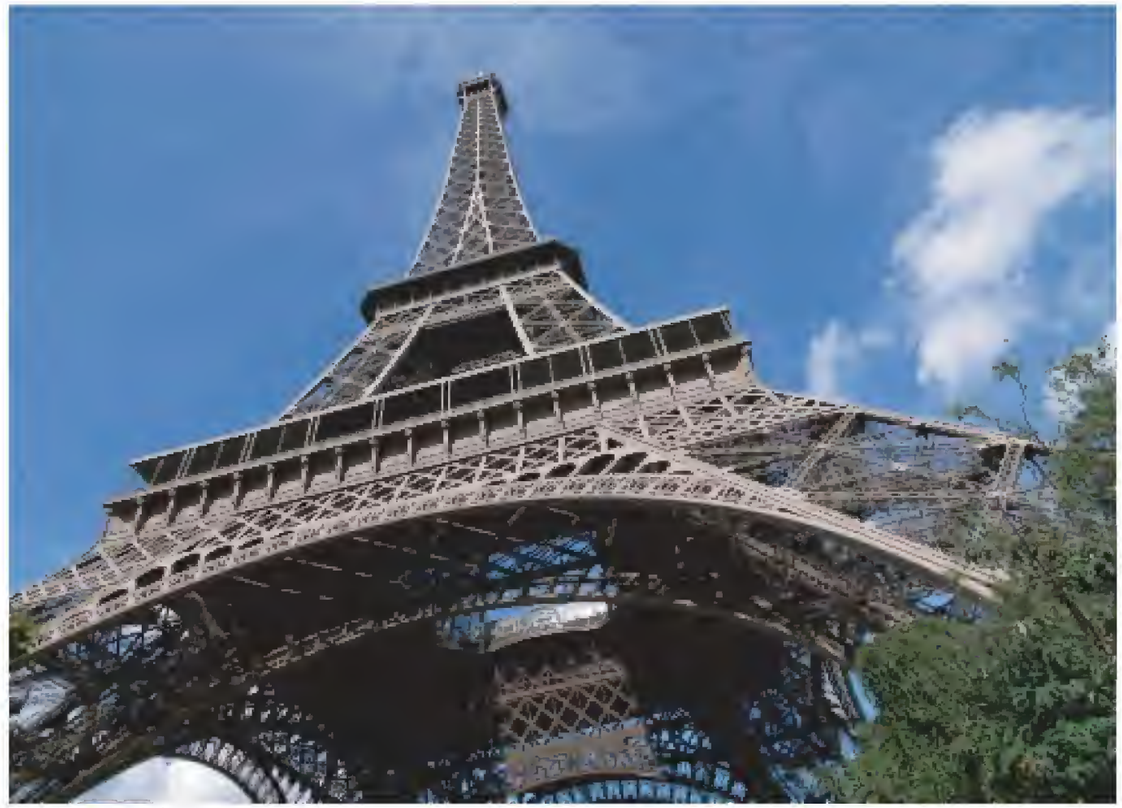
Two-dial system enhances operability and user concentration

The GR Digital comes with two dials - a front dial for selecting the aperture and a rear dial for changing the shutter speed. Together, they offer superb operability and allow smooth setting of desired exposure in the manual exposure mode. The front dial can also be used to scroll menus for speedier operation.

A host of great features

- Wide-ranging shutter speeds (180-1/2000 sec.)
- 3:2 aspect ratio available in RAW/Fine mode
- Wide-ranging ISO speeds (64/100/200/400/800/1600)
- 1.5cm close-ups in macro shooting mode
- Fixed focus distance at 2.5m in snap mode
- Automatic auxiliary AF light for accurate focusing even in dark environments
- AF Target Selection function also provides focus-locking without moving camera
- Hot shoe supports metering via external flash unit*2
- 320 x 240 pixel/30fps video recording mode
- 3-way power source (bundled rechargeable battery / AAA regular or rechargeable batteries / AC adaptor)
- 3-point strap links with camera side and top
- USB mass storage support ●Fast data transfer via USB 2.0 ●PictBridge support

2 :Only when a recommended external flash unit is mounted.
<Recommended flash units> Sigma Corporation's EF-500 DG Super and EF-500DG ST(for Sigma)



Wide-angle perspectives bring joy to the photographic experience, especially when every detail is clear from corner to corner.

With use of wide conversion lens (GW-1). 1/660sec, F4.5, ISO64, EV-0.7, (Full-size photo; no trimming)

Various options enhance your creativity and enjoyment of the GR Digital

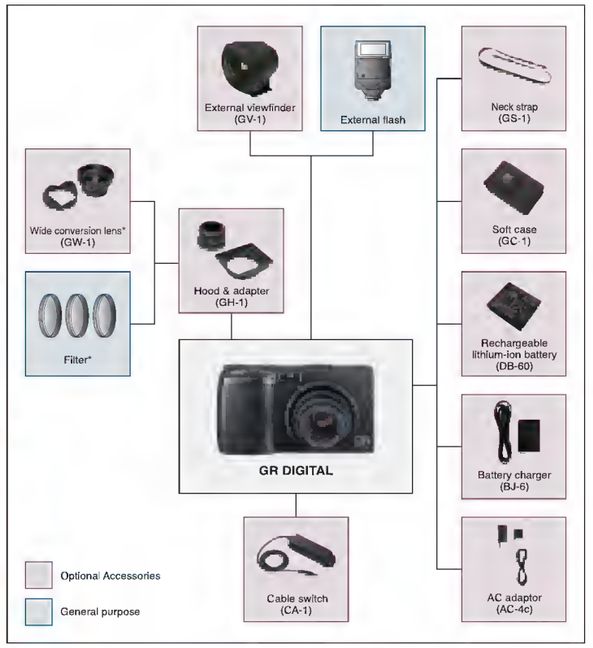
Wide conversion lens (GW-1*1) expands field of view to 21mm

**1: Optional*

The newly developed GW-1 21mm wide conversion lens unit expands the angle of view to a super-wide 21mm without compromising the camera's superb optical performance. An electronic sensor in the GR Digital detects when the GW-1 lens is mounted and adjusts autofocusing accordingly to ensure flawless focusing. A detachable hood is also with this conversion lens for blocking unneeded light and preventing unintended flares from spoiling wide-angle photos.

Hood　Lens　Adaptor*2

**2: Screw shape diameter 37 P0,75 (length 2,6mm)*



** Requires hood & adapter (GH-1) for attachment. Compatible with JIS 37mm filter diameter only. For more details, please ask the manufacturer.*
• Vignetting in viewfinder may increase with use of external viewfinder, wide conversion lens or hood.
• Internal flash cannot be used with wide conversion lens or hood.